INTERNATIONAL BULLETIN
OF PLANT PROTECTION

1933 No. 5

DISCOVERIES AND CURRENT EVENTS *

French North Africa: The Desert Locust (*Schistocerca gregaria*) (1).

ALGERIA.

1 March 1933 — Three large red and yellow swarms coming from the W. settled at 5 p. m. at Adjerma, Bellil and Nili (35 to 50 km S. E. of Laghouat). Departed on the 2nd at midday flying S. S. W.

A swarm coming from the S. E. settled at Reggan (In-Salah).

2 » » — Laying reported from 28 February to 2 March over 3200 ha in the S. of the mixed commune of Tébessa.

A large swarm settled at 5 p. m. at Aïn Taoudmout, douar Hamidy (the Télagh). Flew away on the 3rd at 4. p. m. towards the E.

3 » » — A yellow swarm coming from the W. passed Berriane (40 km. N. of Ghardaïa) flying E.

A large yellow swarm coming from the S. E. settled between Djebel Meslouch and Djebel Halleb, douar Taberdga (Klenchela) over 20 km and laid eggs.

4 » » — Swarms reported on 15 and 16 February in the douars Tafraoua and Kreider (Saïda), departed, the first towards the E. and the second towards the N. W.

A small swarm passed Aïn-el-Hadijar (district of Mascara) flying N.

A red and yellow swarm coming from the S. settled at 5 p. m. at Daïet el Guelt (80 km S. E. of Messad-Djelfa) over 5 × 2 km. Departed on the 5th at 8 a. m. flying W.

A large swarm settled in the region of Bir-Senacha (S. of Khenchela) over 30 sq. km.

A small swarm passed Aïn-Souane (58 km N. of Géryville) flying E.

* Under this and the next heading the countries are arranged in French alphabetical order.

(1) Communication from the Government General of Algeria (Direction des Services Economiques) to the International Institute of Agriculture.

5 March 1933. — A very large yellow swarm settled near Oglat Bikhar (S. of the commune of Khenchela) over 50 sq. km.

A yellow swarm settled in the douar Aliennas (Khenchela). Copulation and laying reported on the 6th at Djebel Batta.

A very large red swarm coming from the S. W. settled at 4 p. m. in the douar Moider (the Télagh). Left on the 6th at 3 p. m. flying N. E.

A large red swarm coming from the S. settled at Moghrar Foukani (Aïn-Sefra). Departed on the 6th flying S.

A small swarm settled to the N. of the pass of Sfa, douar Brani (Aïn-Touta) and departed towards the S.

6 » » — Yellow swarms reported in the regions of Guerguit Speha and Oued-el-Ahmar of the douar Taberdga (Khenchela).

A large pink swarm coming from the S. settled at midday on the Kreider (Saïda).

A large swarm coming from the W. passed over Djemah Lakhdar (Khenchela) flying E.

The swarm reported on 15 February at the douar Ouled Nehar Gheraba (Sebdou) flew away and settled again 40 kms S. W. of Sebdou.

7 » » — A yellow swarm settled in the valley of the Oued-el-Ahmar (Khenchela).

8 » » — Small grey swarms settled in the douars Dehalsa and Ouled Djerad (Trézel) and departed towards the S. W.

A small swarm coming from the N. settled 10 km E. of the Djebel Melah (Géryville) ; flew N. on the 9th.

Laying reported at Hassi en Naga and Oued en Nsa (55 to 70 km N. of Ouargla).

9 » » — A small pink swarm coming from the W. settled in the regions of Wagram (Saïda).

10 » » — A swarm reported on 6 March 40 km S. W. of Sebdou departed and settled 25 km S. E. of Sebdou over 40 km.

A swarm of 1 sq. km settled at Herrich near Négrine (Tébessa). Departed on the 11th and settled at Besseriana and again on the 12th at Sokhna.

Swarms settled in the region of Sidi-Okba, Sidi-Khelil, Saada, Fibache, Chetma laid and flew N.

A small red swarm coming from the W. settled at 5 p. m. at Djorf Takhma, douar Beni-bou-Saïd (Marnia). Departed on the 11th but wheeled round and settled again on the 12th at the same point until 16 March when it flew W.

A red and yellow swarm coming from the S. settled at 15 km S. S. E. of Aïn-Madhi (Laghouat). Copulation and laying on 12 March at Guerna Smara (6 sq. km) at Mekhabet (10 sq. km) and between Aïn-Madhi and El Honita (3 sq. km.).

11 March 1933 — A swarm coming from the E. settled at Kef Ali M'hammou, douar Oulache (Aurès). Flew W. on the 12th.

A very large swarm settled between Maghder el Ournik and 15 km E. of Delaa (Laghouat) covering an area of 30 × 12 km. Copulation and laying.

14 » » — Two small swarms coming from the S. settled at Sidi-Rached and Sidi-Khelil (Touggourt).

A swarm settled at Mogta Delli (Méchéria). Departed on the 17th flying E.

A swarm settled and laid at Soumoussa and Foum Zouif near Négrine (Tébessa).

16 » » — A small swarm coming from the S. settled at Djarima, to the S. of the douar M'chounèche (Aurès) and flew away S.

17 » » — A swarm coming from the S. W. settled at El-Hamman Nouider, region of Bedeau (the Félagh). Departed on the 19th to settle 10 km further W. and on the 20th at 2 p. m. flew away towards the S. W.

18 » » — A swarm coming from the W. settled at Medel, douar Ouled Nehar Gheraba (Sebdou). Flew E. in the morning of the 19th.

19 » » — The swarm reported on 10 March 25 km S. E. of Sebdou flew away S.

Laying reported at the douar Behiret (600 ha) and at Oued Nagues (70 ha) (Tébessa).

A swarm of 3 × 1 km settled at Khorchef el Gherbi, douar Beni-bou-Saïd (35 km S. W. of Marnia). Flew away on the 20th going W.

20 » » — Laying reported at Hassi Debiche (40 km N. of Ouargla) over 4 × 3 km.

Laying reported at Oued el Bir 30 km N. of Ghardaïa.

Large swarms settled from 20 to 22 March in the douar Aliennas (Khenchela). Copulation.

21 » » — Laying reported at Domsta near Négrine (Tébessa).

Laying reported at Hassi Zid (40 km N. of Ouargla).

22 » » — Laying reported at Makloukha, douar Ferkane (Tébessa) over 100 ha.

A swarm settled and laid at Daït Mira near El-Haouch (Biskra).

Large swarms coming from the S. settled between Tafraoua and Kralfallah (60 km. S. of Saïda) and laid at Tafraoua and Aomeur.

Two swarms coming from the S. settled at 4 p. m. at the douar Ouled Nehar Cheraga (40 km S. E. of Sebdou). Departed on the 23rd flying E.

23 » » — A small swarm settled and laid at Draa Edebab to the S. of Liona (Biskra).

23 March 1933 — A swarm settled at Souaridj, douar El-Gor (the Télagh) covering 200 ha.

A swarm coming from the S. W. passed Bedeau (the Télagh) at 3 p. m. flying N. E.

A very large swarm settled at 4 p. m. at Titen Yahia (11 km N. E. of Bedeau, the Télagh). Copulation on 28 March and laying on the 31st.

24 » » — Laying reported over 500 ha near Ferkane and over 150 ha near Négrine (Tébessa).

Three red and yellow swarms settled in the vicinity of Tadjemout (Laghouat) and laid.

25 » » — A very large swarm settled to the S. E. of the douar Taberdga (Khenchela).

A very large swarm settled 30 km S. of Biskra.

26 » » — Swarms coming from the S. W. settled near Khadra and Sfoum Reddad (Aflou).

27 » » — A swarm settled to the S. of Taberdga (Khenchela) and laid at the Oued Mekahzan, Guerriane and Elzzeb.

A large swarm settled between Kanga Sidi Nadji and Teloui Ahmed (Khenchela). Departed on the 28th in the morning flying W.

Laying reported at Zgaing, lat. 38°58, long. 5°62 (Tébessa).

28 » » — Laying reported in the vicinity of Aïn-Madhi and El Haonita (Laghouat).

A swarm coming from the S. settled at Djellal Delouaa to the S. of Seiar (Khenchela).

A swarm coming from the E. settled in the regions of Oued Rhalboune and of the Djebel Tirimbou (Khenchela) and laid.

A yellow swarm coming from the S. settled at Anezedjar (12 km S. of Ghardaïa). Departed on the 29th in the morning, flying N.

A large swarm coming from the S. W. settled to the W. of Khanga (Tébessa) over 6 ha.

29 » » — Swarms coming from the S. settled over 20 ha at Foum ben Derradj and over 8 ha to the N. of the Djebel Mesbouch (Khenchela) and laid.

A swarm settled in the region of Boumelih, 12 km E. of Doucen (Ouled-Djellal-Biskra), flew E.

A large yellow swarm coming from the E. settled at 1 p. m. in the Oued-el-Abiodh (12 to 20 km N. and W. of Ghardaïa).

A large yellow swarm coming from the S. settled at 9 a. m. at Daiet Bagra (80 km S. E. of Messaad-Djelfa) and laid.

30 » » — Laying reported over 20 ha at Roundje, 8 km S. of Ferkane (Tébessa).

30 March 1933 — A large swarm settled on the Oued-Djeddi (Biskra) and laid.

31 » » — A swarm of 4 × 1 km coming from the N. E. settled to the N. of Khanga Sidi Nadji (Khenchela).

A small pink swarm coming from the S. W. settled in the douar Madena (Frenda).

Laying reported at Oued-el-Ozen Neza Mançour, 13 km N. E. of Doucen (Ouled-Djel-lal-Biskra).

MOROCCO.

2 March 1933 — A pink swarm settled at Tillouguit Sit Isha (region of the Tadla). Flew away E. on the 3rd.

5 » » — A red swarm of 10 × 1 km settled near Bouhouria (region of Oudjda).

6 » » — Swarm of 30 sq. km settled at Timouassiouine (region of Oudjda).

8 » » — A pink swarm of 1 sq. km, coming from the N., settled 20 km S. of Demnat (region of Marrakech).

A pink swarm of 3 × 2 km, coming from the N., settled on the Oued Tassout (20 km. S. W. of Demnat – region of Marrakech).

9 » » — A sparse swarm coming from the S. settled on the Ftouaka (region of Marrakech).

A red swarm coming from the W. passed Tillouguit Sit Isha and ascended the Assif Melloul (region of the Tadla).

A small red swarm coming from the N. E. settled at Fritissa (region of Oudjda). Departed on the 10th, flying S. W.

11 » » — A yellow swarm reported between Naïma and Oudjda. Copulation.

13 » » — A yellow swarm of 4 × 2 km settled on the Beni Koulal (15 km S. E. of Taourirt – region of Oudjda).

14 » » — Numerous swarms between Bouhouria and Naïma (region of Oudjda).

Laying reported over 600 ha 18 km N. W. of Oudjda.

15 » » — The swarm reported on the 6th at Timouassiouine (region of Oudjda) flew in a N. E. direction and returned to its point of departure.

18 » » — A yellow swarm settled at Timsiguet (region of the Tadla) and laid on the 19th over 3 ha.

19 » » — A swarm settled at Timgerfi (region of Oudjda) departed flying W.

A red swarm coming from the E. settled at Dar Hamada (region of Oudjda).

20 » » — A dense yellow swarm settled at Sidi-Mimoun (15 km N. W. of El-Aïoun – region of Oudjda). Copulation and laying reported on the 29th over 1000 ha at Kraa-el-Halloufa.

21 March 1933 — A swarm settled on the Sidibou-Naga (65 km E. of Marrakech) and laid over 100 ha.
A swarm coming from the S. settled at the Ouled Saïd (region of Marrakech). Copulation.
25 » » — The swarm reported on the 19th at Timgerfi (region of Oudjda) laid over 2500 ha.
A yellow swarm of 2 × 3 km, coming from the S., settled at the Takijalet (region of Oudjda).
28 » » — A swarm of 5 × 2 km, coming from the S., settled at the Zebelbou-Touzine (E. of Taourirt – region of Oudjda).
Swarm settled at El-Mjadib (E. of Taourirt – region of Oudjda). Copulation.

TUNIS.

2 March 1933 — Laying reported at M'guissem (27 km S. E. of Ben Gardane).
5 » » — A yellow swarm coming from the N. E. settled at Oued-Rebbane (40 km E. of Tataouine) and laid on 5 and 6 March.

Eritrea: The Tropical Migratory Locust (*Locusta migratoria migratorioides*) (1).

During March 1933 no swarms of the tropical migratory locust have appeared in the Colony.

United States of America: Observations on the Distribution of the Strawberry Dwarf Nematode in 1932 (2).

Interest in the distribution of the strawberry nematode (*Aphelenchoides fragariae*) in the United States was first aroused by the discovery in 1929 that it was the cause of the dwarf disease common throughout the Southeastern States from North Carolina to Virginia. So far as American records of plant disease go dwarf disease was not known north of the Arkansas, Tennessee and North Carolina boundary (approximately 36° 30′ N. L.) prior to 1929.

In spite of the fact that plants known to have been shipped from infested areas in North Carolina were planted in a number of northern States, the disease was found only in a few localities and this chiefly on recently introduced plants. This is particularly hard to explain in view of the fact that this nematode has long been known in England, Germany, France, Belgium, Holland, Denmark, Norway and Sweden as the cause of the disease of strawberries known as « cauli-

(1) Communication from the official correspondent of the Institute, Dr. Rolando GUIDOTTI, Chief of the Agricultural Bureau of Eritrea, transmitted by the Government of the Colony.

(2) Communication from the official correspondent of the Institute, Dr. Neil E. STEVENS, Senior Pathologist, Plant Disease Survey, Bureau of Plant Industry, United States Department of Agriculture, Washington.

flower » and strawberry plants from Europe have frequently been introduced into the northern United States.

The dwarf nematode was, however, found in May and June, 1931, on Cape Cod, Massachusetts, on Blakemore plants brought the previous year from North Carolina. These Blakemore plants did not show typical dwarf symptoms. *A. fragariae* was found also in a small number of the Howard 17 variety, a commercial variety commonly grown in this region.

The winter of 1931-32 on Cape Cod was exceptionally mild. This was followed by a dry spring which, just before the picking season began, gave way to a period of abundant rain. Early in May, 1932, several of the Howard 17 fields were in poor condition. Two out of three specimen plants from one of these fields sent to Dr. G. Steiner for examination were found to harbor *A. fragariae* in considerable numbers. J. R. Christie visited the Falmouth region on June 27, 1932. At this time the disease symptoms were not severe and the resemblance to typical dwarf as it occurs in the South not striking. However, both Dr. O. C. Boyd and Dr. E. F. Guba pointed out that the abnormalities were much more marked earlier in the season and judging from photographs taken at that time the resemblance to dwarf was more pronounced.

About one-third of the diseased plants selected from various fields visited were found to harbor *A. fragariae* in numbers of 50 to 100, a few were apparently free of the parasite and the remainder rather lightly infested. Many healthy plants from the same fields were also infested although, on an average somewhat less severely.

The 1932 situation seems to demonstrate beyond doubt that the presence of *A. fragariae* on Cape Cod plantings of Howard 17 has no connection with the introduction of the Blakemore variety in 1930. It appears much more probable that the nematode was long ago introduced into this region – perhaps direct from Europe – but under ordinary weather conditions disease symptoms are rarely produced in the plants. There appears to be no reason to believe that the parasite is consistently increasing or that its effects in this region will be more significant in the future than in the past.

India : Diseases in the Bombay Presidency (1).

The following parasites and virus diseases have been recorded for the first time in the Bombay Presidency : —

Peronospora trigonellae Gaum. was found on *Trigonella foenum-graecum* L. near Poona. This is believed to be the first record of this parasite in India.

Pestalozzia palmarum Cke., which is commonly found on leaves of cocoanut, also affects undeveloped nuts. The fungus had darkish spots on specimens received from Honavar in the North Kanara district.

Uromyces fabae (Pers.) De Bary on *Pisum sativum* L.

Oidium erysiphoides Fr. on *Zizyphus jujuba* Lam.

(1) Communication from the official correspondent of the Institute, Mr. B. N. Uppal, B. A., Ph. D., Plant Pathologist to Government, Bombay Presidency, Poona.

Sclerotium rolfsii Sacc. on *Cannabis sativa* L.
Cercospora rosicola Pas. on Rose.
Mosaic on *Helianthus annuus* L. and *Momordica charantia* L.
Rhizoctonia bataticola (Taub.) Butl. on *Ricinus communis* L.

Southern Rhodesia: Locust Invasion 1933 (1).

Monthly Report No. 2, January, 1933.

1. *Nomadacris septemfasciata.*

Further reports of egg-laying by this species have come from the following districts during the month viz: Wankie, Bubi, Gwelo, Insiza, Selukwe, Chilimanzi, Hartley, Lomagundi, Mazoe, Melsetter, Bikita, and Ndanga. Hoppers have appeared during the period under review in 19 districts, the free districts being in the southern portion of the colony.

The large flying swarms have been gradually dispersing or disappearing and egg-laying appeared to be on the wane towards the end of the month.

2. *Locusta migratoria migratorioides.*

Emergence of hoppers of the Tropical Migratory Locust has occurred in Darwin, Mazoe, and Mrewa Districts during the month, and more eggs are stated to have been laid in Mrewa.

3. Parasites.

The parasite that appears at present to be the most important is *Stomatorrhina lunata*, F., attacking the eggs of the Red Locusts in the Lomagundi and Mazoe Districts. It is believed to be present elsewhere. It was first found, during the present invasion, early in January. Parasitism of over 90 % has been recorded from one farm and is believed to exist in others. Low percentages have also been found. Other enemies of Red Locust eggs are mites and Coleopterous larvae.

Four Dipterous species have been reared from Red Locusts received dead in the laboratory but it has not been established that any of these is parasitic. A species of red mite has been taken from Red adults in the field. A large percentage of adult Red Locusts from an egg-laying swarm (left behind by a large swarm) was found to be infested with roundworms.

4. Destruction of Hoppers.

Hatchings of the Migratory Locust have been dealt with in the Darwin District and the situation in the Zambesi Valley near the Portuguese Border in this District is well in hand. Many swarms of both species have been destroyed in the Mazoe District and hatching continues. In the Zambesi Valley the destruction of very heavy hatchings of the Red Locust is proceeding. In the Lomagundi District

(1) Communication from the official correspondent of the Institute, Mr. Rupert W. Jack, F. E. S. Chief Entomologist, Department of Agriculture, Salisbury, Southern Rhodesia.

the hatchings have been exceptionally heavy and widespread and a considerable staff of Europeans and natives is being employed in the work of destruction on Crown Lands and in Native Reserves. Hatchings in the districts of Wankie, Bubi, Nyamandhlovu, and Bulalima-Mangwe are reported to be heavy.

Operations against hoppers of one or both species are being carried out in twenty-one districts. Further heavy hatchings are expected and prepared for in various parts of the colony.

The farmers generally are destroying hoppers on their farms in a satisfactory manner and are cooperating well with the local officials.

It is to be realized that complete extermination of hoppers in the more remote portions of the colony is an impossibility and that the expense incurred would not be justified in view of the heavy infestations in neighbouring territories which are not apparently being attacked.

Monthly Report No. 3, February, 1933.

1. *Nomadacris septemfasciata.*

No further reports of egg-laying have been received during the period under review, and by the end of the month flying swarms had disappeared. The more advanced hoppers had reached the fourth stage of their development by the end of the month. Further hatchings have occurred in most of the infested districts.

2. *Locusta migratoria migratorioides.*

A few flying swarms have been reported during the month, chiefly from the Sipolilo and Darwin areas. These are believed to consist of adults of the new generation and all but one are thought to have crossed our border from the north. Neither egg-laying nor new hatchings have been reported. Hoppers have apparently reached the fifth stage of their development, and in one case, have changed to adults.

3. Parasites.

No further parasites have been reported.

4. Destruction of hoppers.

Operations against hoppers continued in the infested districts, although towards the end of the month in some less heavily infested districts they were confined to occasional expeditions of a minor nature.

The infestation in the Southern portion of the colony developed to a larger extent than was at first expected.

5. General.

Control in some areas is proving to be more difficult than was anticipated, owing to successive egg-deposits and a prolonged period of hatching. Driving the hoppers has not proved to be practicable, and reports of definite marching

of hoppers, as occurs in other species, have been rare. Experiments in control of Red Locust hoppers in maize lands and in long grass by baiting methods have not yet shown promising results. Ground maize cobs have been found to be as effective as maize meal or wheaten bran as a carrier.

It is expected that there will be six hopper stages of the Red Locust.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Belgium. — By Ministerial Decree of 10 April 1933, any grower or holder of cherries who observes the presence of *Rhagoletis cerasi* (cherry fruit fly) in his crops or stores is expected immediately to make declaration to the burgomaster of the commune, who will inform the Minister of Agriculture by telegram.

Cherries gathered on a plot of land which the Chief of the Plant Protection Service has declared to be infested by the cherry fruit fly cannot be transported from that plot unless they have been cooked.

Ne steps can be taken for the transport of cherries grown within the radius of one kilometre from a plot of ground declared to be infested with *Rh. cerasi* except with the permission of the above named officer.

The Chief of the Plant Protection Service may prescribe all measures necessary for the extermination of the insect, more particularly the gathering of the whole of the fruit and the injunction to cut down the cherry trees grown on land declared infested.

In certain cases he may extend these measures to other plants which present danger in regard to the propagation of the insect.

The Chief of the Plant Protection Service may allow exceptions to the preceding provisions, especially with a view to research or if the case is one of the cultivation of varieties known to be resistant to the insect.

Infringements of the present Decree will be punished by the penalties indicated in article 21 of the Royal Decree of 12 May 1929.

When the application of these provisions has occasioned severe losses to the grower cultivating the plots of ground in question, the Minister of Agriculture may decide on the grant of a sum in compensation. (*Moniteur Belge*, Bruxelles, 28 avril 1933, 103e année, nº 118, p. 2238-2239).

Spain. — By ' Orden ' of 16 March 1933 a Station has been created for the improvement of potato cultivation which will form part of the Institute of Agricultural Research and will constitute a Section of the Institute.

Among the purposes of the Station is to study the adaptation of imported potato varieties for improving existing varieties for different uses and for disease resistance, also to carry out researches on the ' mountain cure ' in order to produce strains selected for resistance to virus diseases. (*Gaceta de Madrid*, Madrid, 21 marzo 1933, año CCLXXII, tomo I, núm. 80, pág. 2120).

*** In view of the fact that in North Portugal there are various seats of potato wart disease (' sarna negra ', *Synchytrium endobioticum*), by Ministerial ' Orden ' of 6 April 1933 it is forbidden to import potatoes from Portugal

unless the consignments are accompanied by a certificate issued by the official Phytopathological Service of the country of origin in which it is stated that the potatoes have been produced in a region free from wart disease and at least 20 kilometres distant from any infected potato crops, and that the consignment was found free from the fungus at the time of the inspection carried out by the Spanish Phytopathological Service on importation. (*Gaceta de Madrid*, Madrid, 9 abril 1933, año CCLXXII, tomo II, núm. 99, pág. 245).

France. — By Ministerial Decree of 14 February 1933 the members of the Liaison Committees at the Phytopathological Research Centres have been nominated. (*Journal Officiel de la République Française*, Paris, 17 février 1933, LXV^{ème} année, nº 41, p. 1576).

*** By Ministerial Decree of 16 February 1933 the members of the Consultative Committee of the Crop Protection Service have been nominated. (*Ibid.*, p. 1575-1576).

*** A Ministerial Decree of 28 March 1933 establishes the powers of the Consultative Committee for crop protection. (*Journal Officiel de la République Française*, Paris, 29 mars 1933, LXV^{ème} année, nº 75, p. 3163).

Italy. — By Ministerial Decree of 28 December 1932 shooting and snaring birds by any means are forbidden during the whole of the 1933-34 shooting season in the region of Mt. Artemisio (about 10,000 hectares) in the province of Rome. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 11 gennaio 1933, anno 74º, n. 8, pp. 103-104).

*** A Ministerial Decree of the same date contains restrictions with regard to shooting in certain parts of the province of Parma. Shooting and snaring of the red-legged partridge [*Caccabis rufa*] are, for instance, forbidden during the 1933-34 shooting season (*Ibid.*, p. 104).

*** By Ministerial Decree of 5 January 1933 shooting and snaring birds by any means are forbidden during the whole of the 1933-34 shooting season in the region of Campagnano in the province of Rome. (*Ibid.*, 16 gennaio 1933, n. 12, pp. 185-186).

*** By Ministerial Decree of 18 February 1933 the Director of the Station of Plant Pathology at Rome has been nominated Special Commissioner for the supervision of the obligatory control measures against 'mal secco' of citrus trees [*Deuterophoma tracheiphila*] in the citrus growing regions of the provinces of Messina and Catania (1).

*** The Ministerial Decree of 28 February 1933 revising the special technical regulations for the exportation of potatoes, specifies *inter alia* that by healthy tubers is understood those free from disease and having the surface free

(1) Communication from the Ministry of Agriculture and Forests.

from spots, traces of rot or other defects spoiling the appearance of the tuber or indicating that it is not edible. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 16 marzo 1933, anno 74°, n. 63, pp. 1082-1085).

*** A Ministerial Decree of 14 March 1933 containing special technical regulations for the exportation of peaches established *inter alia* that fruits intended for export must be healthy. (*Ibid.*, Roma, 23 marzo 1933, n. 69, pp. 1203-1206, 4 figg.).

*** By Ministerial Decree of 16 March 1933 an obligatory Consortium (Syndicate) of olive growers of the province of Campobasso has been formed. One of the objects of the Syndicate is the control of diseases and pests of the olive. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 24 marzo 1933, anno 74°, n. 70, pp. 1215-1216).

*** By Ministerial Decrees of 18 and 23 March 1933 obligatory Consortiums (Syndicates) of the olive growers of the provinces of Frosinone and Brindisi have been formed. Among the purposes of the Syndicates is the control of pests and diseases of the olive. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 29 marzo 1933, anno 74°, n. 74, p. 1256 ; 30 marzo 1933, n. 75, pp. 1273-1274).

*** In order to prevent the introduction into Italy of exotic scale insects very dangerous to fruit trees, by Ministerial Decree of 29 March 1933 the importation and transit of plants and parts of plants of the genus *Ulmus*, with the exception of the fruits (samaras), coming from all countries, are suspended. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 4 maggio 1933, anno 74°, n. 104, p. 1843).

*** By Ministerial Decree of 31 March 1933 an obligatory Consortium (Syndicate) of the olive growers of the province of Rieti has been formed. Among the objects of the Syndicate is the control of the pests and diseases of the olive. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 7 aprile 1933, anno 74°, n. 82, pp. 1370-1371).

*** By Ministerial Decree of 6 April 1933 an obligatory Consortium (Syndicate) of the olive growers of the province of Rome has been formed. Among the purposes of the Syndicate is the control of pests and diseases of the olive. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 20 aprile 1933, anno 74°, n. 93, p. 1584).

*** Ministerial Circulars Nos. 19090 and 19911 of 22 and 27 April 1933 addressed to the Directors of the Regional Phytopathological Observatories, establish the regulations to be observed in the exportation of raw cherries to Great Britain (Circ. No. 19090), to Germany and the Netherlands (Circ. No. 19911) (1).

(1) Communication from the Ministry of Agriculture and Forests to the International Institute of Agriculture.

Latvia (1). — By Decree of the Minister of Agriculture, dated 2 December 1932, published in the Official Journal (No. 280 of 1932), the complete destruction of barberry (*Berberis vulgaris*) and of buckthorn (*Rhamnus cathartica*), ordered by the Law of 20 March 1930 [see this *Bulletin*, 1930, No. 8, p. 126], has to be accomplished by 20 March 1935.

*** The Ministry of Agriculture has published in the Official Journal (No. 19 of 1933) a list of the means of control of plant diseases and pests which may be placed on the market without having been previously submitted to an official biological examination.

*** An amendment published by the Official Journal (No. 24 of 1933) modifies as follows the Law of 28 May 1931 relating to plant protection [see this *Bulletin*, 1931, No. 12, p. 220].

The Ministry of Agriculture is empowered to submit all means of control of plant diseases and pests to tests and to prohibit trade in products found to be ineffective or ill-adapted. Moreover it will carry out inspection of plants intended for import or export and may prohibit the importation or exportation of injurious plants or plant pests. Finally it may order the inspection of fields, gardens, forests and storage depots.

Results of the testing of the means of control may be published giving the names of the respective products and manufacturers. If the case is that of national production the manufacturers will bear the costs of this examination. Costs of the inspection of imports and exports will be borne respectively by the persons importing and exporting.

Consignments in transit are submitted to examination if unloaded and re-packed in Latvia.

Morocco (French Zone). — Two Decrees of the Director of Waters and Forests, dated 1 and 3 March 1933, authorise the destruction of rabbits in certain zones respectively of the region of control of the Hayaïna (region of Fez) and of the civil control of the Zemmour. (Empire Chérifien. Protectorat de la République Française au Maroc. *Bulletin Officiel*, Rabat, 10 mars 1933, XXII^{ème} année, n° 1063, p. 226).

Portugal. — The Presidential Decree No. 22:389 of 29 March 1933 is concerned with the importation of seeds, plants and plant parts intended for purposes of propagation coming from European and non-European countries, and with their exportation.

Goods for importation must be accompanied by an official certificate of origin and health, which must, according to the case concerned, specify that the products contain no soil nor seeds of *Cuscuta* or *Orobanche* ; that potato wart disease (*Synchytrium endobioticum*) does not occur in the fields of origin, and that the

(1) Communication from the official correspondent of the Institute, Dr. M. Eglits, Phytopathological Laboratory of the University, Riga.

latter are situated at least 5 km from any centre of infection with this disease ; that the region of origin is free from *Bacillus amylovorus, Endothia parasitica* and ' court-noué ' ; that there is no plant attacked by *Phytophthora cambivora* within a radius of at least 5 km of the region of origin.

As a protection against the introduction of *Graphium Ulmi* it is forbidden to import elms; it is also forbidden to import into the Azores potatoes coming from Madeira, in order to avoid the introduction of *Bacterium Solanacearum*.

Imported products must be submitted to inspection and, if necessary, to fumigation.

Imported fruits must be absolutely free from exotic scale insects and in particular from *Aspidiotus perniciosus*.

Seeds, plants and plant parts intended for export must be submitted to inspection and if they comply with the regulations the exporter will be given the certificate of origin and health issued in accordance with the requirements of the phytopathological legislation of the importing country. (*Diário do Govêrno*, Lisboa, 1 de abril de 1933, I série, núm. 75, págs. 447-448).

*** In the north of the country some small seats of ' verruga negra ' [potato wart disease, *Synchytrium endobioticum*] have been discovered ; by Presidential Decree No. 22 : 463 of 8 april 1933 the following regulations have been established :—

During 5 years from the date at which the presence of the disease is ascertained owners of infected land are allowed to grow potatoes only if they belong to varieties recognised as immune by the Phytopathological Inspection Services and are of certified origin.

Zones of protection are declared surrounding the centres of infection extending over a radius of about 500 metres.

Owners of land included within a zone of protection are allowed to cultivate only potatoes complying with the conditions indicated above.

Potatoes grown within the centres of infection and within the zones of protection may not be transported outside without the written authorisation of the Division of the Phytopathological Inspection Services.

Potatoes which have been transported outside the zones and do not satisfy the preceding requirements will be confiscated and distributed to charity institutions ; in cases in which potato seed has already been planted the crops will be lifted and the land will be regarded as infected for 5 years.

The General Administration of the Agricultural Services will at the necessary time have the infected land and zones of protection inspected, and will lift and destroy any potato crops not belonging to immune varieties.

It is forbidden to transport from infected land farmyard manure and any residue of crops grown on such land.

It is also forbidden for growers within the infected zones to sell any plant coming from the said zones and intended for replanting on other land.

Offences will be punishable by a fine of 500 $.

Any person knowing of the existence of a new centre of infection and any person knowing of a lot of potatoes in storage, for sale or in transit which is

infected with the disease is obliged to report it to the local authority who will inform the General Administration of Agricultural Services. (*Ibid.*, 10 de abril de 1933, I série, núm. 82, págs. 645-646).

Tripolitania. — By Governatorial Decree of 30 March 1933 any person consigning eggs of locusts to the political and administrative authorities of the Colony will receive an award at the rate of four liras per kilogramme (gross weight), including in the weight for payment also the normal percentage of soil which in the judicial discretion of the above named authorities is ordinarily found to be mixed with collected eggs.

The regional authorities are responsible for the custody of the eggs after receipt and payment and will destroy them by burning. (*Bollettino Ufficiale del Governo della Tripolitania*, Tripoli, 16 aprile 1933, anno XX, n. 9, pag. 522).

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Prof. ALESSANDRO BRIZI, *Segretario generale dell'Istituto, Direttore responsabile.*